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ABSTRACT

Computerized analysis of 1980 Census data documented educational deficiencies in 85 Central Appalachian counties of Kentucky, Tennessee, Virginia, and West Virginia. Dropout rates among youth ages 16-19 were found to be higher in Central Appalachian counties than in non-Central Appalachian counties, the poorest counties had the highest dropout rates, and eastern Kentucky counties had the highest illiteracy rate as indicated by percentage of adults with less than an eighth-grade education. The 85 counties showed similarities that cut across state boundaries and set them apart as a group from other Appalachian and non-Appalachian counties. Among the similarities were high poverty levels, financial hardship for local school districts, and low percentage of school revenue from local sources. Data suggested that high dropout rates and adult illiteracy may not reflect a failure of the schools so much as general social and economic conditions. A map of Central Appalachia is included. Four figures show comparisons of: dropout rates in Central Appalachian counties compared with the rest of the counties in each state; dropout rates by poverty level in Central and non-Central Appalachia; county illiteracy rates by states; and dropout percentages, educational levels, percent below poverty, percent of school revenue received from local sources, annual expenditure per student, and pupil-teacher ratio. (LFL)

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DROPOUT AND FUNCTIONAL ILLITERACY RATES IN CENTRAL APPALACHIA

APPALACHIAN DATA BANK REPORT #1
March 1985

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RESEARCH REPORTS

DROPOUT AND FUNCTIONAL ILLITERACY RATES IN CENTRAL APPALACHIA

APPALACHIAN DATA BANK REPORT #1
March 1985

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H I G H L I G H T S

An analysis of the 1980 Census data shows that:

* the dropout rates among youth (ages 16-19) are higher in the counties of Central Appalachia than in counties which are not part of Central Appalachia;

* the poorest counties have the highest dropout rates;

* the counties of eastern Kentucky have the highest functional illiteracy, as indicated by the percentage of dropouts and of adults with less than an eighth-grade education.

This report on dropout and functional illiteracy rates in Central Appalachia is a product of the Appalachian Data Bank, a project of the Appalachian Center of the University of Kentucky. The purpose of the Appalachian Data Bank is to collect and disseminate information on education, unemployment, social services, and economic development in the Central Appalachian Region. The publication of this education report completes the first phase of establishing a data base for Central Appalachian counties, which we hope will become a useful resource to both researchers and the general public in the region. The data included in this report have been extracted from the 1980 Census in a form which will allow county-level data from other sources to be added to the data base in the future.

EDUCATION DEFICIENCIES CONTINUE TO BE A PROBLEM IN CENTRAL APPALACHIA

Education has been a topic of growing concern in the last few years. The advent of high technology, it has been argued, has made it more imperative than ever that those who wish to succeed begin with an adequate educational background. In spite of the ever-increasing importance of education, and in spite of some recent improvements, many areas of the Appalachian Region continue to lag behind the rest of the country in terms of the quality and quantity of education attained by the population.

A common definition of the overall Appalachian region, as determined by the Appalachian Regional Commission (ARC), includes parts of 13 states (only West Virginia is designated in its entirety as Appalachian). The ARC has defined the Central Appalachian subregion as including 85 counties in eastern Kentucky, eastern Tennessee, westernmost Virginia, and southernmost West Virginia. The sub-region includes all of the officially designated Appalachian counties of Kentucky, but only some of the official Appalachian counties of Tennessee, Virginia, and West Virginia. The Central Appalachian region is shown in Figure 1 (see page 3). These Central Appalachian counties are characterized by rugged terrain, poor farm land, and an unstable coal-mining economy; historically they have shared a variety of social and economic problems, including poverty, illiteracy, lack of health care, and poor housing.

This report documents some key education deficiencies in the 85 Central Appalachian counties of Kentucky, Tennessee, Virginia, and West Virginia. The data show revealing lines of demarcation. With regard to the variables included in this report, the 85 counties within the subregion show strong similarities that cut across state boundaries, while Appalachian counties which lie outside the central subregion tend to resemble the non-Appalachian counties in each state. (Given this pattern, the term "non-Central Appalachian counties" in the remainder of this report is to be understood as <u>including</u> those counties which lie outside Appalachia altogether.)

FIGURE 1

CENTRAL APPALACHIAN REGION

Subject Area

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1980 CENSUS SHOWS DROPOUT RATES HIGHER IN CENTRAL APPALACHIAN COUNTIES

Using data from the 1980 Census, Figure 2 shows a comparison of the dropout rates of Central Appalachian and non-Central Appalachian counties for each of the four states (see page 5). "Dropouts" are defined here as youths (ages 16-19) who have not completed high school and are not currently enrolled.

A clear trend appears: those counties designated as Central Appalachian have higher average proportions of the young people who have not finished high school. The pattern is most pronounced in Kentucky, where the average dropout rate for Central Appalachian counties is more than 50% higher than the average rate for all other counties in Kentucky. And even in West Virginia, which lies entirely within the Appalachian region, by the ARC definition, there is a notable difference between those counties which lie within the central subregion and those which do not.

Educational research in recent years has downplayed the notion that achievement and attainment are directly and significantly related to such factors as per pupil expenditures, class size, and average teacher salary. What the published research has indicated is the importance of local characteristics such as poverty and the general level of education in a community. The 1980 Census data presented here illustrate the close relationship between poverty and dropout rates. Figure 3 shows that those counties which have higher proportions of people living below the poverty line ("high poverty" on the graph) tend to have higher percentages of young people who have not completed high school than do counties with lower poverty rates (see page 6).

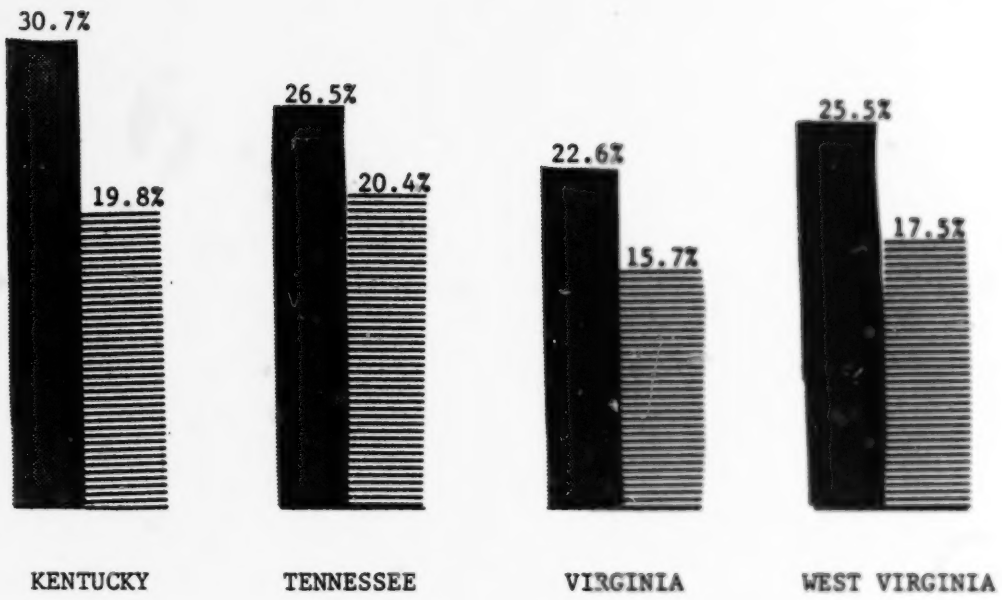
For Figure 3, all 406 counties in the four states are classified as having above- or below-median ("high" or "low") poverty rates. Poverty rate is calculated as the percentage of persons below the age of 55 whose annual income in 1979 was below the official poverty line set by the federal government. (It should be remembered that many consider this to be a conservative index of poverty; families with incomes as much as 25% above the poverty line could still face major financial difficulties.) The median poverty rate for all 406 counties in the four states is 15.05%; in other

FIGURE 2

AVERAGE PERCENT OF DROPOUTS (AGES 16-19)

IN CENTRAL APPALACHIAN COUNTIES

COMPARED TO COUNTIES OUTSIDE THE SUBREGION*



= Central Appalachian counties

= other counties outside the subregion

* see Technical Notes, page 12

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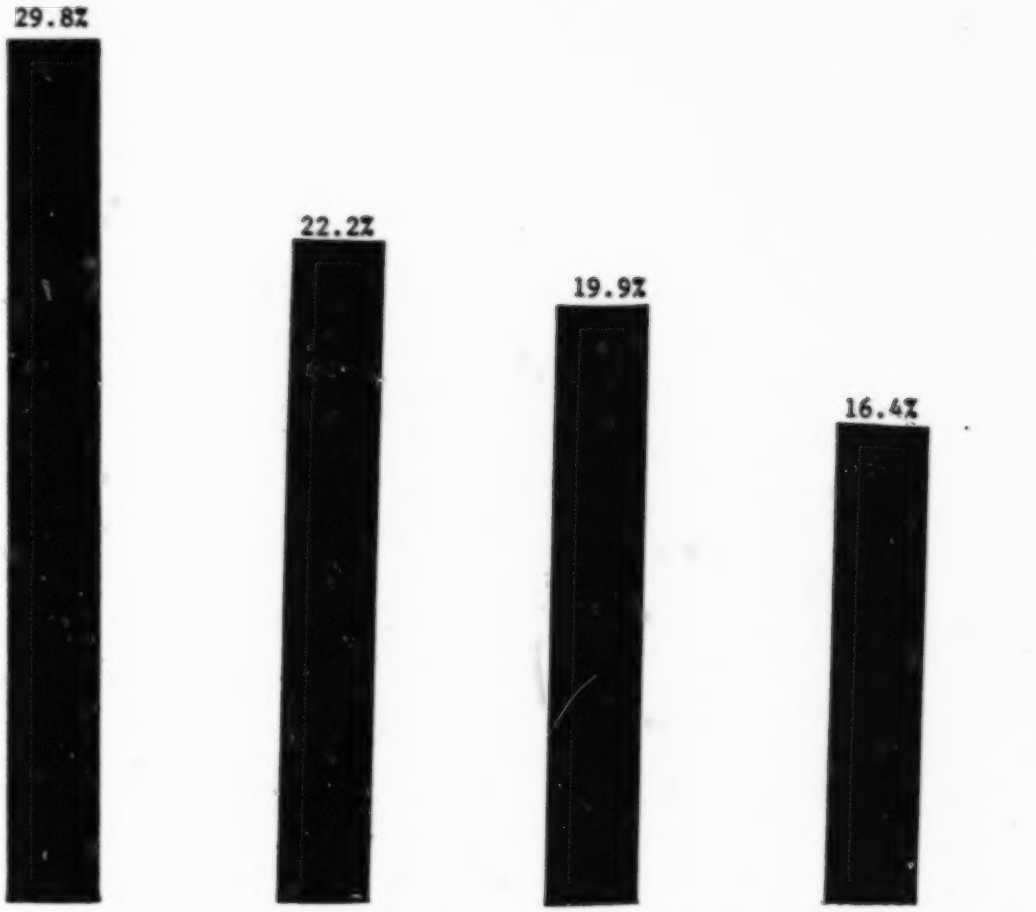
FIGURE 3

AVERAGE COUNTY DROPOUT RATES

BY POVERTY LEVEL

IN KENTUCKY, TENNESSEE, VIRGINIA, AND WEST VIRGINIA*



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words, half of the counties have more than 15.05% of the population with incomes below the poverty line, and half have less.

Figure 3 also clearly shows the concentration of high poverty levels in the Central Appalachian subregion. Central Appalachian counties are more likely to have poverty levels above the median than are the other counties included in the graph. In fact, seventy-three of the 85 Central Appalachian counties lie above the median on poverty rate.

Table I provides a closer look at the link between high levels of poverty and dropout rates. In the first column of Table I, the actual dropout rates are listed for the eighteen counties with the highest dropout rates in Central Appalachia and the eight counties with the lowest dropout rates in Central Appalachia. These two extreme groups are separated by a line representing the median for all counties (Appalachian as well as non- Appalachian) in the four states. With few exceptions, this "median line" neatly divides these "high-dropout" and "low-dropout" counties on the other variables in Table I as well (see page 8).

For example, with the exception of two counties in Tennessee (DeKalb and Van Buren), all of the "high-dropout" counties are characterized by poverty rates which are well above the median. In contrast, the "low-dropout" counties have poverty rates near or even below the median.

Poor economic conditions in some Central Appalachian counties, indicated here by the poverty rates, translate into financial hardships for local school districts. This is demonstrated in the last three columns of Table I, which combine the Census data used in the bulk of this report with data taken from local school districts in the region by Professor Alan DeYoung and associates at the University of Kentucky for the 1979-80 school year. For instance, the counties with the lowest dropout rates generally spend more per pupil than do those counties with higher dropout rates, (although these differences in spending are not consistent or very dramatic).

An area where the difference between counties with low dropout rates and counties with high dropout rates is very clear is the percent of school revenues which come from local sources. The "high-dropout" counties

TABLE I

CENTRAL APPALACHIAN COUNTIES
WITH HIGHEST AND LOWEST DROPOUT RATES

	PERCENT DROPOUTS AGES 16-19	PERCENT OVER 25 WITH 0-8 YRS.EDUC.	PERCENT BELOW POVERTY LEVEL	PERCENT SCHOOL REVENUE LOCAL	ANNUAL EXPENSE PER PUPIL (DOLLARS)	PUPIL/ TEACHER RATIO
CLAY,KY	49.9	59.9	43.2	1.7	1058	21.0
MENIFEE,KY	48.7	54.8	27.4	2.3	1045	23.0
JACKSON,KY	47.8	62.5	38.1	2.1	1184	20.7
MAGOFFIN,KY	43.5	55.0	33.5	2.6	1083	23.2
KNOX,KY	42.6	50.9	38.5	2.7	1125	23.3
McCREARY,KY	39.9	56.0	40.7	2.4	1114	21.7
PERRY,KY	38.9	47.9	23.9	3.7	1074	22.6
WAYNE,KY	38.7	58.8	33.8	3.6	1091	22.3
VAN BUREN,TN	38.6	46.1	15.1	24.2	1116	19.2
BREATHITT,KY	38.5	48.1	35.9	8.3	1127	21.3
CASEY,KY	37.4	55.2	34.6	3.2	1063	22.0
PICKETT,TN	36.5	52.3	27.4	26.6	1357	18.3
LESLIE,KY	36.3	55.0	34.3	3.1	1026	21.7
HANCOCK,TN	36.2	60.0	41.0	9.7	1498	16.4
HARLAN,KY	36.2	45.1	26.6	4.6	1062	21.8
KNOTT,KY	36.2	50.7	30.8	3.2	1184	21.5
MORGAN,KY	36.1	55.5	36.6	3.8	1195	19.6
DE KALB,TN	35.9	45.0	20.5	24.6	1140	18.7
[redacted]						
SCOTT,VA	16.4	48.1	19.7	21.5	1411	16.1
BOYD,KY	15.4	24.3	13.0	13.9	1201	21.8
MONROE,WV	15.3	34.0	19.9	16.0	1025	16.1
ANDERSON,TN	15.1	23.9	14.6	33.7	1490	15.2
GREENUP,KY	14.7	27.1	12.4	10.1	1144	26.3
PUTNAM,TN	14.4	37.9	14.8	33.3	1142	18.9
MADISON,KY	12.2	30.4	20.6	11.9	1127	21.1
ROWAN,KY	11.1	36.6	20.6	12.0	1228	22.4

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all fall well below the median on this variable (here given separately for Kentucky and Tennessee, reflecting different tax policies in the two states). Several of the Kentucky counties with high dropout rates supply almost none of their school revenues locally. There is little doubt that this situation reflects local differences in the economic base. For example, one local school district in Anderson County, Tennessee, reported an unusually high percentage (68.6%) of locally generated school revenues, a situation which can probably be attributed to the presence of a large TVA project in that district.

The final column of Table I gives pupil/teacher ratios for the counties listed. Consistent with our earlier statement, pupil/teacher ratios do not seem to be related to differences in dropout rates.

FUNCTIONAL ILLITERACY IN THE REGION

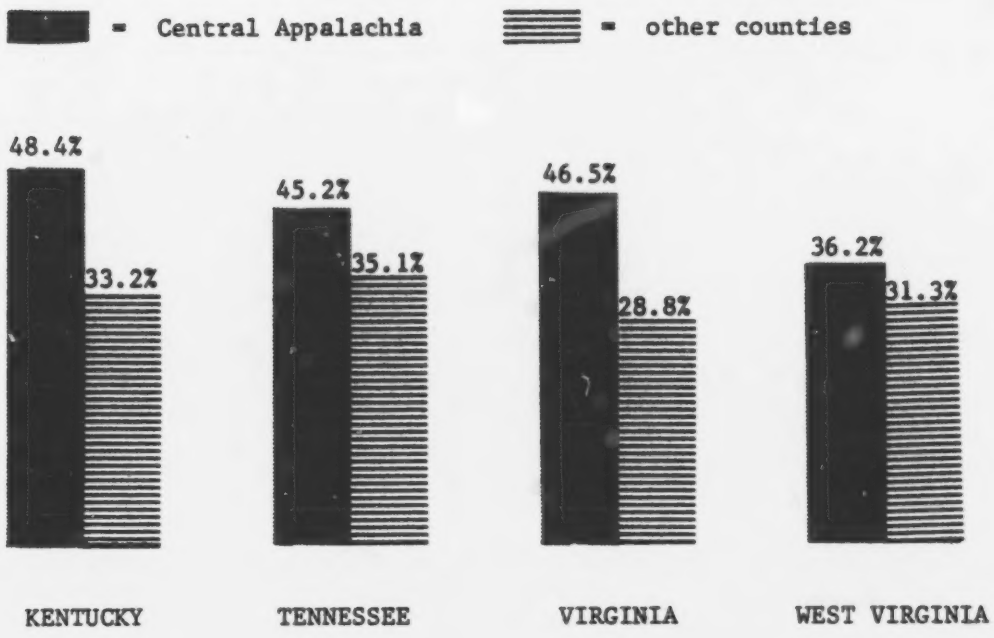
An issue which is related yet somewhat separate from that of youth dropouts is the general educational level of the population. Recently, this issue has become a matter of increasing public concern; in Kentucky, for example, a state commission has just been formed to study the problem of adult functional illiteracy. While the Census does not include precise data on the number of adults who cannot read and write, it does provide a crude indicator of the extent of functional illiteracy: the number of persons over the age of 25 who have completed eight or fewer years of school.

Figure 4 shows that the counties in the Central Appalachian region have higher average proportions of adults with less than ninth-grade education than do the non-Central Appalachian counties (see page 10). The pattern is less clear in West Virginia, which is entirely Appalachian.

The high proportion of adults without adequate education is a problem in its own right and also part of the problem of youth dropouts. Referring back to Table I, columns 1 and 2, it can be seen that high dropout rates among youth are related to high levels of adults without adequate education. Of course, these counties also have relatively high levels of poverty.

FIGURE 4

AVERAGE COUNTY FUNCTIONAL ILLITERACY RATES*



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SOME CONCLUDING REMARKS

These figures confirm a history of educational deficiencies in the region, but they also cast some light on the nature of the current problem. High dropout rates may not reflect a failure of the schools so much as they reflect general social and economic conditions in the region. While such reforms as teacher competency tests, higher teacher salaries, and a "back-to-basics" attitude may help some, they probably will not solve all of the region's educational problems. In counties where more than half of the adults have not finished high school, and nearly half of the population lives below the poverty level, the traditional link between education and social advancement may simply not exist for young people, either in terms of the role models provided by adults around them or the economic realities of finding work within the region.

The relationship between education and other social problems is complex. Dropout, for example, is both cause and effect of such problems as poverty, unemployment, and delinquency. Although this report is primarily descriptive, it hopefully will encourage more in-depth analyses of the interrelationships among the problems facing the region.

*TECHNICAL NOTES

The figures given in the charts in this report generally represent averages (means) of county rates or percentages. Care should be taken, then, in extrapolating from them to the regional population; to calculate an average for the region, one should weight the counties by population size. This can be done with the county data base created for this report, by going back to the raw numbers from which the figures in this report were computed.

The county data base on which this report is based was created by using the U.S. Census Bureau's CENSPAC software package to extract the variables and counties of interest. This file was then merged with an SPSS file which contained flag codes designating each county as Appalachian, Central Appalachian, or non-Appalachian.